



UNITED STATES PATENT AND TRADEMARK OFFICE

T.

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/689,910

10/21/2003

Athula Ekanayake

9391

3978

27752

7590

11/20/2006

THE PROCTER & GAMBLE COMPANY
INTELLECTUAL PROPERTY DIVISION
WINTON HILL BUSINESS CENTER - BOX 161
6110 CENTER HILL AVENUE
CINCINNATI, OH 45224

EXAMINER

FLOOD, MICHELE C

ART UNIT

PAPER NUMBER

1655

DATE MAILED: 11/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/689,910

Applicant(s)

EKANAYAKE ET AL.

Examiner

Michele Flood

Art Unit

1655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-7 and 9-20 is/are pending in the application.
- 4a) Of the above claim(s) 11-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-7,9 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Acknowledgment is made of the receipt and entry of the amendment filed by Applicant on August 18, 2006. Further acknowledgment is made of Applicant's cancellation of Claims 4 and 8.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Election/Restrictions

This application contains claims 11-20 drawn to an invention nonelected with traverse in Paper No. on March 8, 2006. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claims 1-3, 5-7, 9 and 10 are under examination.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-3, 5-7, 9 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Newly applied as necessitated by amendment.

The metes and bounds of Claim 1, as amended, are rendered uncertain by the recitation of the claim in its entirety. For instance, while the preamble of Claim 1 recites "A process for isolating theanine from a plant material", the subject matter of claim designated process step c) is directed to obtaining a "theanine-rich extract", which could invariably contain ingredients other than theanine. The lack of clarity renders the claim indefinite since it is unclear as to what is the subject matter to which Applicant seeks patent protection, *i.e.*, a method for isolating theanine from a plant material or a method of isolating a theanine-rich extract from a plant material.

The metes and bounds of Claim 5 are rendered vague and indefinite by the recitation of the claim in its entirety because the subject matter of b) is directed to contacting the extract comprising theanine with a polyamide adsorbent to obtain a theanine-containing eluate. However, the subject matter of Claim 5 encompasses each of the claim designated process of iii) does obtains a theanine-containing extract, instead of a theanine-containing eluate. Therefore, it is unclear as to the subject matter Applicant intends to seek patent protection. As Claim 6 and Claim 7 depend directly from Claim 5, Claims 6 and 7 are similarly rejected.

All other cited claims depend directly or indirectly from rejected claims and are, therefore, also, rejected under U.S.C. 112, second paragraph for the reasons set forth above.

Claim Rejections - 35 USC § 103

Claims 1-3, 9 and 10, as amended, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kubota et al. (U) in view of Ford (A), Zhongyu et al. (V) and Ekanayake et al. (BB, US 5,879,733). Newly applied as necessitated by amendment.

Applicant's claims a process for isolating theanine from a plant material comprising: a) contacting the plant material with a solvent to obtain an extract comprising theanine; b) contacting the extract comprising theanine with a polyamide adsorbent to obtain a theanine-containing eluate; and c) subjecting the theanine-containing eluate to a nanofiltration step to obtain a theanine-rich extract. Applicant further claims the process of claim 1 wherein the plant material comprises tea leaves. Applicant further claims the process of claim 2 wherein the solvent is selected from the group consisting of water, ethanol, and mixtures thereof. Applicant further claims the process of claim 1, wherein the step b) is performed using column extraction. Applicant further claims the process of claim 9, wherein the theanine-rich extract of step c) is further concentrated.

Kubota teaches a process for isolating theanine from green tea leaves comprising contacting the plant material with water, on page 18, Column 1, second paragraph. Kubota further teaches various methods for the removal of tannins and high molecular compounds, chlorophyll and caffeine, including contacting the extract comprising theanine with an absorbent.

The teachings of Kubota are set forth above. Kubota teaches the instantly claimed invention except for b) contacting the extract comprising theanine with a

Art Unit: 1655

polyamide absorbent to obtain a theanine-containing eluate; and c) subjecting the theanine-containing eluate to a nanofiltration step to obtain a theanine-rich extract, and further concentrating the theanine-rich extract of step c). However, it would have been obvious to one of ordinary skill in the art to add the instantly claimed ingredients and process steps to the method for isolating theanine from tea leaves taught by Kubota to provide the instantly claimed invention because at the time the invention was made because at the time the invention was made it was known in the art that polypolyamide as an adsorbent was useful in the isolation or separation of theanine, polyphenolic compounds, tannin catechins, as evidenced by the teachings of Ford and Zhongyu; and that nanofiltration of tea extracts comprising theanine and concentration thereof was useful process steps in the making of theanine-rich extract, as evidenced by the teachings of Ekanayake. At the time the invention was made, one of ordinary skill in the art would have been motivated and one would have had a reasonable expectation of success to replace the adsorbents or chemical process steps used in the method of isolating theanine taught by Kubota to provide the instantly claimed method because Ford taught a method of removing water soluble polyphenolic substances and tannins present in aqueous plant extracts, such as tea involved in the formation of some hazes and precipitates, comprising adsorbing the polyphenolic substances in the solution onto a polyamide adsorbent, wherein the adsorbent could be tailored to allow rather specific uptake of phenolic fractions from solutions (see Column 6, lines 42-45); Zhongyu taught that while polyamide extract tea polyphenols, "Substances like amino acids (theanine) were not adsorbed by PA/SiO₂ and thus easily separated"; and, Ekanayake taught that

Art Unit: 1655

subjecting a theanine-containing to a nanofiltration step is very important in the enrichment of a theanine-containing eluate treated with an adsorbent because it removes high molecular weight materials, such as pectins, proteins, chlorophylls (and respective degradation products), thearubigins, theaflavins, oxidation products that form complexes with residual ions in the extract, and oxidized polyphenols that may be complexed with the theanine contained in the theanine-containing eluate, in Column 7, line 65 to Column 8, line 34 and Ekanayake further taught that theanine-rich extracts can be further concentrated after subjecting the green tea extract to a nanofiltration step, in Column 10, lines 4-17; and, Kubota suggests that while the various disclosed adsorbent systems and chemical processes for the isolation of theanine are useful in the extraction of amino acids, such as tea leaves or green teas, the disclosed isolation methods are not suitable to those of black tea that contain a large quantity of phenolic substances which are soluble in hot water but insoluble in ethyl acetate and roots of tea plants which contain a small quantity of phenolic substances and a large quantity of water soluble high polymers (see page 21, Column 1, third paragraph).

Thus, the claim-designated limitations would have been no more than a matter of judicious selection to one of ordinary skill in the art or the skilled artisan practicing the invention at the time the invention was made to pick and choose the experimental parameters for contacting a green tea extract with an polyamide adsorbent material and subjecting the theanine-containing eluate to a nanofiltration step to provide a method of isolating theanine from a green tea extract because at the time the invention was made the prior art taught that such process steps, ingredients and experimental parameters

Art Unit: 1655

were conventional in methods in the isolation of a theanine-rich extract obtained from green tea.

As each of the references indicates that the various ingredients, process steps and experimental parameters used in the process of producing the claimed extract are result variables, they would have been routinely optimized by one of ordinary skill in the art in practicing the invention disclosed by each of the references.

Accordingly, the claimed invention was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, especially in the absence of evidence to the contrary.

No claims are allowed.

* Applicant is advised that the cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site (www.uspto.gov), from the Office of Public Records and from commercial sources. Should you receive inquiries about the use of the Office's PAIR system, applicants may be referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michele Flood whose telephone number is 571-272-0964. The examiner can normally be reached on 7:00 am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terry McKelvey can be reached on 571-272-0775. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1655

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


MICHELE FLOOD
PRIMARY EXAMINER

Michele Flood
Primary Examiner
Art Unit 1655

MCF
November 13, 2006